



Conference Abstract

Genetic changes in natural *Taraxacum officinale* populations obtained under pollution stress

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Abstract

Plant populations under stress undergo genotypic alterations which can drive the species towards extinction or adaptation. Defining a suitable plant model and the respective genetic markers for studying the perturbations in the population's genetic diversity is of crucial importance for the needs of bioconservation and proper ecosystem management.

In the current study we prove the usefulness of *Taraxacum officinale* (common dandelion) as a suitable model plant for genetic biomonitoring. We compared the genotype composition of four specific dandelion populations: 1) a population from the area around the closed “Kremikovtzi” metallurgical plant; 2) a population from the still working “Stomana”-Pernik metallurgical facility; 3) a population from a rural, but naturally rich in heavy metals region close to Bosnek village; 4) a control population from a clean site next to Lokorsko village.

Four genetic markers of tree different kinds (a microsatellite, a ribosomal DNA marker and two chloroplastic DNA markers) were tested in order to reveal the genotype diversity in the chosen populations. Our results showed strong quantitative and qualitative genotypic differentiation between pollution-impacted and clean populations. The most interesting observation was that the unique genotypes, considered as result of mutations, were predominantly detected in the plants from the heavy metal polluted regions.

Keywords

Heavy metal pollution, genetic markers, genotypic diversity, *Taraxacum officinale*

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